DIRECT TESTIMONY OF

GEORGE A. LIPPARD, III

ON BEHALF OF

SOUTH CAROLINA ELECTRIC & GAS COMPANY

DOCKET NO. 2019-2-E

Q. PLEASE STATE YOUR NAME, BUSINESS ADDRESS, AND POSITION WITHIN SOUTH CAROLINA ELECTRIC & GAS COMPANY ("SCE&G" OR "COMPANY").

A. My name is George A. Lippard, III. My business address is Post Office Box 88, Jenkinsville, South Carolina 29065. I am the Site Vice President of the Virgil C. Summer Nuclear Station ("VCSNS" or "V.C. Summer") for South Carolina Electric & Gas Company ("SCE&G" or the "Company").

Q. DESCRIBE YOUR EDUCATIONAL BACKGROUND AND YOUR BUSINESS EXPERIENCE.

A. I earned a Bachelor of Science degree in Mechanical Engineering from Clemson University in 1979 and a Master of Business Administration degree from the University of South Carolina in 1982. I joined SCE&G in 1983 as a Nuclear Training Instructor at VCSNS. I received a Senior Reactor Operator Certification in 1986 and a Senior Reactor Operator License in 1992 from the United States Nuclear Regulatory Commission ("NRC"). Since joining the Company, I have

held positions in the Operations, Outage Management, Licensing, and Training organizations at V.C. Summer. I have also served in the leadership roles of Operations Manager and Plant General Manager at VCSNS. On January 30, 2016, I was promoted to Vice-President of Nuclear Operations for Unit 1. Effective January 1, 2019, my title changed to Site Vice President of the V.C. Summer Nuclear Station as a result of the merger of Dominion Energy, Inc. and SCANA Corporation.

Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?

A. The purpose of my testimony is to review the operating performance of VCSNS during the period from January 1, 2018, through December 31, 2018 ("Review Period").

Q. WHAT ARE SCE&G'S OBJECTIVES IN THE OPERATION OF VCSNS?

A. SCE&G's primary objective at VCSNS is safe and efficient operation. The Company also strives for excellence in all phases of operation of the facility. The station's key focus areas of safety, reliability, outage and work management, work force development, and organizational effectiveness constitute the Company's core business plan elements. SCE&G's constant improvement in these areas over the years has facilitated VCSNS's outstanding service record. Furthermore, SCE&G's business objectives are focused on maintaining a competitive production cost for the generation of electricity using nuclear fuel.

Q. WHAT HAS BEEN THE COMPANY'S EXPERIENCE WITH THE PERFORMANCE OF THE VCSNS?

A. VCSNS performed well during the Review Period. SCE&G continuously meets or exceeds all NRC requirements and Institute of Nuclear Power Operations ("INPO") standards. Consistent with the provisions of Section 58-27-865 of the South Carolina Code of Laws Annotated, as amended, V.C. Summer's net capacity factor based on reasonable excludable nuclear system reductions during the Review Period was 102.26%, and the gross generation output was 7,665,652 megawatt hours.

Q. PLEASE EXPLAIN THE ROLES OF INPO AND THE NRC WITHIN THE NUCLEAR INDUSTRY AND DESCRIBE ANY RANKINGS RECEIVED BY VCSNS FROM THOSE AGENCIES.

A. INPO is a nonprofit corporation established by the nuclear industry to promote the highest levels of nuclear safety and plant reliability. INPO promotes excellence in the industry in the operation of nuclear electric generating plants. For the applicable reporting period, INPO rated VCSNS's overall performance as strong.

The NRC is responsible for the licensing and oversight of the civilian use of nuclear materials in the United States. During the Review Period, the NRC reported that VCSNS operated in a manner that preserved public health and safety and fully met all cornerstone objectives.

Q. PLEASE EXPLAIN WHY INPO ASSIGNED V.C. SUMMER STATION AN OVERALL PERFORMANCE RATING OF STRONG AS COMPARED TO THE PRIOR RATING OF EXCELLENT.

A. INPO lowered the overall performance rating of V.C. Summer Station one notch from "excellent" to "strong" based primarily on the performance decline exhibited by the three unplanned forced outages at V.C. Summer Station during 2017, which were discussed in my testimony in last year's fuel proceeding.

Q. DID VCSNS EXPERIENCE ANY UNPLANNED OUTAGES DURING THE REVIEW PERIOD?

A. No.

Q. DID VCSNS EXPERIENCE ANY PLANNED OUTAGES DURING THE REVIEW PERIOD?

A. Yes. During the Review Period, VCSNS experienced one planned outage. On October 5, 2018, the unit began to reduce its generation output in a controlled manner, and the generator output breaker was opened at 11:52 p.m. that same day to conduct V.C. Summer's 24th scheduled refueling outage ("RF24").

Q. HOW LONG DID RF24 LAST?

A. RF24 lasted approximately fifty days and nineteen hours during which time the Company met all technical objectives and completed scheduled maintenance

activities. The reactor returned to criticality at 5:22 p.m. on November 24, 2018, and the outage ended with the closure of the generator output breaker at 6:43 p.m. on November 25, 2018. I am pleased to report to the Commission that the planned outage, which was scheduled for fifty-two (52) days, was accomplished approximately one day and five hours ahead of schedule. The outage was completed with no nuclear safety significant events.

Q. PLEASE EXPLAIN THE KEY MAINTENANCE AND MODIFICATION TASKS SCE&G ACCOMPLISHED DURING RF24.

A. During the refueling outage, approximately one-third of V.C. Summer's 157 fuel assemblies were replaced, and scheduled maintenance work that cannot be performed when the plant is in operation was conducted. During this time, over 11,000 tasks including preventative maintenance, corrective maintenance, plant modification, and surveillance testing tasks were completed successfully. SCE&G completed a number of key maintenance and modification tasks during RF24, a few of which are described below.

- **Integrated Leak Rate Test.** During RF24, SCE&G performed an Integrated Leak Rate Test of the reactor building. This test is required every fifteen years and involves pumping the reactor building atmosphere to 47.1 pounds per square inch, holding pressure for eight hours, and measuring leakage. The test was completed satisfactorily.

- **Steam Generator Inspections.** Every third outage, SCE&G performs detailed eddy current inspections of steam generator tubes to detect flaws and ensure integrity on each of its three steam generators. Additionally, the secondary, non-nuclear side of each steam generator is inspected and cleaned. These inspections were completed satisfactorily, with a total of ten tubes being plugged.
- **Safety-Related Electrical Inverters.** V.C. Summer utilizes four safety-related inverters to supply highly reliable power to vital instrumentation. These inverters are designed to supply AC power to their respective loads when supplied from either an AC or a DC source. Two of these inverters were replaced in RF24, with the other two scheduled for RF25 in 2020. The replacement of these inverters was part of an overall strategy to address obsolete equipment with more reliable technology.
- **Feedwater Regulating Valve Positioner Upgrades.** V.C. Summer replaced each of the three feedwater regulating digital positioners with new models which utilize frictionless, optical technology. These critical valves are now more reliable due to the technology upgrade.

Q. WHEN WILL THE NEXT REFUELING OUTAGE OCCUR?

A. SCE&G's next refueling outage, Refueling Outage No. 25 ("RF25"), is scheduled for Spring 2020. Refueling outages are scheduled every 18 months to

replace depleted fuel assemblies. Maintenance and testing that cannot be done with the plant on-line are also conducted during the refueling outage.

Q. WHAT IS THE USED FUEL STORAGE CAPABILITY FOR VCSNS?

A. V.C. Summer's used fuel storage capability consists of a spent fuel pool, which is equipped with storage racks designed to hold fuel assemblies removed from the reactor, and a dry cask storage facility, which was placed in service in January 2016. Together, SCE&G's fuel storage capability has been designed to accommodate storage of all fuel used for the life of the plant. The next transfer of used fuel from the spent fuel pool to the dry cask storage facility is scheduled to occur in the first half of 2019.

Q. DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?

A. Yes.